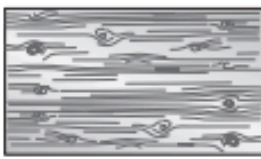


Problem Solving Workshop: Mixed Problem Solving

For use with pages 78–95

1. **Multi-Step Problem** The distance of the marathon event in the Olympics is 42.195 kilometers.
 - a. Write the distance of the event in meters.
 - b. Write the distance from part (a) in scientific notation.
 - c. After running 33.875 kilometers, how many meters are left in the race? Write your answer in scientific notation.
2. **Extended Response** You bring six 2 liter bottles of the same kind of soda to a dance. The soda will be sold at the refreshment table.
 - a. Each 2 liter bottle of soda costs \$1.25. How much did you pay for the 6 bottles?
 - b. The soda will be served in plastic cups. One plastic cup holds 250 milliliters of soda. How many plastic cups of soda can be served?
 - c. Students can purchase a cup of soda for \$.50. Find the amount of money collected from selling all of the cups of soda. What is the least number of cups of soda that must be sold to cover the cost of the soda? *Explain* the steps you used to find your answer.
3. **Gridded Answer** What is the area of the rectangular piece of plywood shown below, in square meters?



850 cm

4.8 m
4. **Multi-Step Problem** A can of peanuts has a mass of 0.34 kilogram.
 - a. Convert the mass of the can of peanuts to grams.
 - b. How many grams is a 2.3 kilogram container?
 - c. How many cans of peanuts does it take for the mass of the peanuts to exceed the mass of the 2.3 kilogram container?
5. **Open-Ended** Write a number in scientific notation that lies between 1,738,465 and 1,916,314.
6. **Short Response** You offer to bring juice to a party of 20 people. How many liters of juice do you need to bring so that every person can have two 300 milliliter glasses? *Explain* your reasoning.
7. **Extended Response** Light travels about 300,000 kilometers per second. It takes about 193 seconds for light to travel from the sun to Mercury.
 - a. Use the distance formula $d = rt$ to approximate the time it takes for light to travel from the sun to Mercury. Write your answer in standard form and in scientific notation.
 - b. The distance between Jupiter and the sun is about 13.44 times greater than the distance between Mercury and the sun. About how far is Jupiter from the sun? Write your answer in scientific notation.
 - c. How many times longer does it take for sunlight to travel to Jupiter than to Mercury? *Explain* your reasoning.